

FOCUS

Setting Environmental Agendas: The Search for Common Ground

Tensions and overt conflict among government, industry, environmental advocacy groups, and the research community over the form and focus of environmental agendas have been around since the term "environment" was first used to mean more than heating and air conditioning. The differences have been expressed in every form from formal dialogues and debates in respected journals and at professional meetings to shouting matches in the halls of those same meetings as well as in courtroom confrontations.

The tenor of the interactions may be changing. A sampling of representatives from government, business and industry, regulatory offices, environmental advocacy groups, and research scientists indicates a readiness and a willingness to try a more cooperative approach.

Just how the change in administrations, from Republican to Democrat as well as from World War II generation to (mostly) baby boomer generation, may affect overall federal environmental agendas is still unknown, though the amount of ink used to speculate on the possible effects is substantial. President Clinton has publicly stated that Vice President Gore will be the administration's coordinator for technology and science policies. How much of the Clinton-Gore campaign vision for the United States' future in science and technology will survive federal budget realities is still to be determined.

Problems in setting a coherent, coordinated environmental agenda for the nation persist, mainly because mutual questions of credibility and trust among the different sectors remain. Ellen Silbergeld, professor of epidemiology and toxicology at the University of Maryland, Baltimore, and senior adjunct scientist with the Environmental Defense Fund, described the atmosphere among the spheres of interest in environmental health research as "very confrontational in the past. Environmentalists have seen research played off against action. That's given research a bad name. Research has been kind of a pawn in the confrontations. Concessions by government, industry, and environmental groups are needed to get us out of the bind, off dead center."

At the same time, scientists with different perspectives on the nation's environmental agenda were generally optimistic about prospects for cooperation, despite

past history. Charles Powers of the Health Effects Institute (HEI) pointed to the creation of an asbestos research entity modeled on the jointly funded HEI as a measure of the perceived success of one cooperative venture. HEI research into automobile air emissions is supported by the EPA and the United States auto industry. Powers observed that after 12 years, HEI is enjoying credibility for its research.

Jeanette Wiltse, deputy director of EPA's Office of Health and Environmental Assessment (OHEA), cited the Green Lights voluntary pollution reduction program of EPA and industry as an example of a successful cooperative effort, where cooperation followed the realization that companies could save money while reducing pollution. Linda Greer, senior project scientist with the Natural Resources Defense Council, noted the growing use of mediation and negotiation in determining the final form of environmental regulations in contrast to the usual practice of litigating first.



Stephen Delaney

Jeanette Wiltse, deputy director, EPA Office of Health and Environmental Assessment

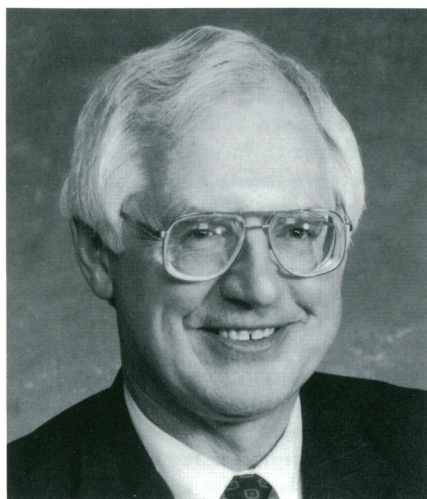
Roger McClellan, president of the Chemical Industry Institute of Toxicology, has a perspective on tensions in the setting of environmental agendas that goes back to the "turmoil in the '60s and early '70s. . . part [of which] was reaction to what we learned about vinyl chloride, bis-chloromethyl ether [heavily used industrial compounds linked to cancers in workers exposed on the job]. Some good things came out of that from industry—CIIT came into being; industry began evaluating

materials and developing appropriate control strategies." CIIT is an independent toxicological research operation supported by its member companies, a Who's Who of the chemical industry. CIIT's agenda focuses on heavily used production chemicals that are being studied for potential health effects should humans be exposed.

From the scientific perspective, McClellan believes the time is ripe to revisit past studies of exposure/dose-response relationships, using the new tools of cellular and molecular biology. Exploring mechanisms and the process of DNA repair and damage at exposure levels below those possible with cruder tools is an approach whose time has come. "All of the sectors need to work together to go beyond what I call the glass floor. We need to document exposure and response versus the risks of regulatory concern. We need to get down to relevant human exposure levels, revise the megamouse studies with our new tools." EPA's risk reduction strategies that address *de minimis* risk versus zero risk are a step forward in addressing risk management, according to McClellan. However, communicating the concept of minimal risk to a broader public is a big problem.

Returning to the scientific challenges, McClellan said, "The easy problems have been solved in individual labs. The remaining problems are best tackled by multidisciplinary teams, which I sometimes think seem almost beyond biological scientists. Some of our greatest opportunities are at the interfaces of the various disciplines. We don't have good institutional means in the biological sciences to create strategies and the strategic orientation for interdisciplinary work. We put [dollar] limits on federally funded program projects that artificially constrain the possibilities."

There are mechanisms in place for certain kinds of cooperative agenda-setting, even though they are not always used. Eula Bingham of the University of Cincinnati, former head of the Occupational Safety and Health Administration, said that the Occupational Safety and Health Act provides for outside advisory committees composed of representatives of various interests, though the provision has rarely been used. Bingham was the chair for an occasion of cooperative agenda-setting in regard to coke oven emissions. When standards for coke oven emissions were developed, she said, the process went more smoothly because of participation by industry, labor, public and academic interests, state, and Department of Health and Human Services



Bill Bell

Roger McClellan, president, Chemical Industry Institute of Toxicology

officials. This broad participation identified major sticking points early in the process and helped resolve the conflicts.

"In the occupational health arena, the key word is feasibility. We know we set standards that allow disease. The standards are based on feasibility—technical and economic," Bingham said. "Somehow, people high in government say they don't want to pay for committees. I think they're worth their weight in gold." By having all of the different perspectives presented, the important questions get asked and considered early in the rule-making process, Bingham noted. The Occupational Safety and Health Act is "an obvious place for industry and labor to work together," she said. "It has to be more thoroughly used."

At the most visible environmental regulatory operation, the EPA, the sense of long siege from competing sectors lingers. Wiltse pointed out that a persisting issue for EPA has been keeping apprised of what industry is doing. For example, CIIT is making progress in molecular mechanisms, yet industry appears to be minimizing its contributions there. Wiltse said, "They don't look at the big picture. With more basic [scientific] understanding, we can do a better job. We have to sell that idea." The companies OHEA deals with are "frustrated with risk assessment," Wiltse continued. "If it's not successful in getting their chemicals off the list, they want to know, 'What's in it for us?' The people with money have been very short-sighted. Business is not sure it can trust toxicology, and then there's the business of knowing [whether a chemical causes adverse effects] versus not knowing."

Often, epidemiology is the first research tool available, and any potential lack of power to detect effects with this

approach is such that "they might as well not bother," Wiltse continued. On the other hand, "If we can do epidemiology with biomarkers, that's a path where the investment will pay off." Cooperative research, peer-reviewed, is fine, but mixed funding "can be a problem unless everybody buys in. Too often, where studies are co-funded, the results get painted as favoring one or the other position."

There are substantive signs that more proactive approaches to getting all interested parties to work on issues of mutual concern are in place today. The United States Congress has provided recent, explicit directions for cooperation among federal departments and agencies in the form of legislation. For example, the Energy Policy Act of 1992 sets ground rules for cooperation between the Department of Energy and the Department of Health and Human Services for research on the biological effects of electromagnetic fields. The law includes a five-year, coordinated effort in research and communication on electric and magnetic fields. Nine federal agencies will be part of an Interagency Committee coordinating government-wide efforts on the topic. That law was one result of what a congressional aide who has worked on environmental legislation for a number of years described as a "very contentious atmosphere in Washington for the last 12 years" because of divided government. Presidents Reagan and Bush and Congress have held different views. "Congress passed laws that were very prescriptive to avoid foot-dragging. Some of these pressures are easing. . . . There's some real optimism that there will be more progress on these issues," continued the aide, who asked not to be identified. "We're hoping for a cooperative relationship with the administration on environmental health research."

Congressman Henry Waxman, one of the forces involved in setting past environmental agendas at the federal level, knows where he plans to lead from his post as chairman of the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. "Over the past decade, the nation has failed to address many of the environmental problems that scientists say cause the greatest threat to public health—drinking water contamination, radon exposure, indoor air pollution, pesticide exposure," Waxman said. "This Congress, our biggest payoff will be in addressing these high-risk threats. A simple measure, like requiring the disclosure of radon risks before real estate transactions, can save thousands of lives."

The issue of risk is receiving increased attention. Relative risk was the topic of a bill introduced in the 102nd Congress by

Senator Daniel Patrick Moynihan. The bill did not pass, but it covered ranking of risks, the need for sound science and sound scientific advice, and the need for high-quality information to manage resources for protecting human health, welfare, and ecological resources. The bill is likely to be considered again.

Another proposal that surfaced and faded in the 102nd Congress specifically included the concept of "environmental high-impact areas," which asks whether certain neighborhoods, communities, the poor, and minorities bear a disproportionate share of adverse impacts from environmental pollution in the United States. That measure was introduced by then-Senator Gore. It mandated cooperative and coordinated efforts by federal offices to address environmental quality and an inventory of where the pollution occurs.

Broadening input for agenda setting, including addressing the role of risk assessment, has become an interest for a number of different agencies involved in research. NIEHS Director Kenneth Olden called a meeting in mid-March focused on bringing better science into the process. "Investment in good science is good business in that it is a cost effective way to improve public health," Olden wrote in his invitation to a spectrum of leaders from government, industry, academia, and other interest groups.

NIEHS Deputy Director Richard Griesemer noted some possible outcomes of the meeting. Options could range from doing all the work of testing chemicals, picking chemicals to test, and communicating results from within the National Toxicology Program, the federal government's interagency testing program for health effects of chemicals, to involving the whole country, Griesemer pointed out. The more likely outcome is a focused approach as the various groups espousing different views look for common, productive ground in identifying an achievable agenda.

Scientists should be involved in making the public policy decisions as well as providing sound science to advance the nation's environmental agenda, according to one scientist involved. William Cooper, professor of zoology at Michigan State University, recently served as chair of the Ecological and Human Welfare Risks Subcommittee of the EPA Science Advisory Board's Relative Risk Reductions Strategies Committee. Cooper's subcommittee developed methods for prioritizing anthropogenic risks to ecological systems and human welfare, as distinct from risks to human health. The subcommittee looked at potential injuries to the ecosystem and human welfare from environmen-

tal threats and the time required to repair such injuries, should they occur. The threats ranked highest (highest relative risk) were those posing the greatest potential injury and requiring the longest time to correct. Global warming was at the top of the list.

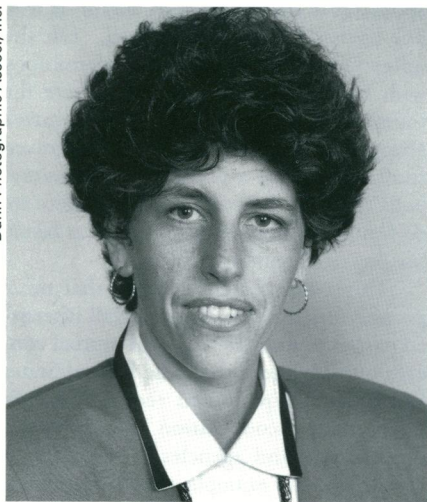
Cooper noted that the push behind looking at the concept of relative risk for environmental problems is economic, and he concluded, "... risk assessment ... [is] the only game in town. It's an imprecise science but it's the best we've got."

Scientists generally take a broad view of the possibilities and challenges of drawing the nation's environmental agendas together. Powers said, "I read the environment as very conducive to expansion of efforts like HEI. When we're interpreting facts on health and the environment, the public needs confidence in the competence and credibility of the source of the information." HEI's research is peer-reviewed under a process "largely borrowed from the National Institutes of Health," according to Powers.

When HEI was created to explore questions about the nature and effects of auto emissions, "there was a clear adversarial atmosphere surrounding auto emissions. There was nothing to provide data for a large number of compounds, and something new was required." Now, Powers says, there are three avenues where cooperative programs may focus: first, "Industry is aware of public concerns and wants to get ahead of the regulatory process, to take the lead in persuading government to join in getting ahead, in doing more preventive research instead of waiting for public terror/concern to drive the process." Second, Powers said, "EMF [electromagnetic fields] is going to need a large spade. It's a matter of public worry, and scientists know. . .very little. Public/private mechanisms can work there. The science is very difficult and if we throw politics in, we'll never get it." Powers concluded, "Public and private interests may recognize that the early regulations and early science on which the regulations were based should be reviewed. The worst case projection may no longer obtain. To do this, an outside group with considerable credibility will be needed. Often, the regulators are not interested in the resources, and an industry has been built on the regulations. There are groups that don't want to admit they were wrong."

The idea that the existing science on some chemicals that are already regulated may need to be revisited struck a responsive chord, though from a somewhat different perspective, with Greer and Silbergeld, scientists from environmental advocacy groups.

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Linda Greer, senior project scientist, Natural Resources Defense Council

Greer said that the goal of NRDC's participation in quasi-judicial rule making with EPA is "to craft a program that regulates the most dangerous materials in the best way we can. Where is the science [for underground contamination]? It's in the Dark Ages, with little basic information on what's in the contamination or what's happening to it."

Silbergeld, of EDF, used dioxin as an example of the science gap. "Government and industry have to come to accept that there are times when there's reason to act in the face of uncertainty. Environmentalists must accept the thought that research might change the way you will react and regulate."

Greer recalled "12 years of entrenchment, a time of suits against EPA for not doing its job," as a prelude to a changed perspective for industry. "It was just not enough to have the White House and the Office of Management and Budget. Attitudes toward the environment changed. Now, I do a lot of mediation instead of litigation," she said.

For NRDC, the perspective is narrow and deep, Greer said. "The challenge lies in prescriptive requirements on certain wastes. A lot of stuff isn't covered. We may be less stringent overall but get as many [substances] as possible covered. It's an outright trade: maximum materials in versus maximum control." She posed a common question, "How do you craft wise public policy in the absence of good information, never mind good science?" According to Greer, the place of the environmental advocacy group at the negotiating table is "based on what you learn in fifth grade about why wars are fought: so somebody can sit at the head of the negotiating table. Suits are filed, the parties establish their strengths, and then work

some things out. Where that hasn't happened, there's not a productive interaction. Where the issue has matured, the parties are ready to negotiate."

Greer echoed Silbergeld's view on the place of research in many past confrontations between industry and environmental advocacy groups. "For a time, the call for good science was becoming synonymous with the call for deregulation. That's unfair to science." But she continued, "We need good science to more accurately craft what we do. We tend to join industry in the position that until there is improved science we may not want a risk-based approach. Scientists are quick to blame regulators for regulating without information, but we're looking at a 10- to 15-year lag time."

Greer agreed with Wiltse on the importance of participation early in the policy debate. "What we're facing in the renewal of the Superfund law is a dialogue that may work around the science. Cleaning what can be cleaned is not a fix. We need to prevent what we can't fix, and we need to err on the side of safety," she concluded.

Silbergeld espoused a particular area for collaboration and cooperation among the interested parties: research into noncancer diseases associated with environmental exposures. Neurodegenerative diseases, one of her special areas of interest, are "extraordinarily pervasive," she said. "We know genetics are a small factor. Dementias and Parkinson's have long payouts and are incredibly expensive. We just got a cost estimate from NIH for Alzheimer's disease—\$80 billion. When we look at the investment in identifying the causes versus the cost, it's pathetic." She suggested there should be a cooperative war on neurologic diseases, collecting the data that is not collected now. "We should institute a surveillance program with industry, and we need to do chemical testing for noncancer endpoints. We need a coordinated, integrated campaign to address the questions."

Wiltse pointed out that trying to work with all of the interested parties is a daily fact of life at EPA. Environmental advocacy groups have been watchful of the process but "don't have the resources for the day-to-day level investment. Where EPA has been able to enlist them, they see the process through." For testing chemicals and the TOSCA program, there is a "rather well worked out negotiating process with, mostly, the Chemical Manufacturers' Association. Everybody is covered under the rule; instead of blockading all of it, something gets done," she said.

When EPA first presented the Green Lights program, most chief executives looked at it suspiciously, and program acceptance came down to the same ques-

tion most EPA efforts evoke: Will it cost me or save me dollars? Green Lights saves money and has had good participation. The Agency has a number of voluntary programs with industry.

Wiltse concluded, "It's important to get all the players around the table from the beginning. Confrontation is tiresome. You can always litigate to a standstill. Once industry makes up its mind that it will play in a given matter, I've never seen them back out. They settle in and cooperate and work hard once they're committed. Industry research is very credible as a whole. The trick is getting it out."

At the Chemical Manufacturers Association, a coordinated program to meet and get ahead of environmental regulatory requirements and communicate the results to a broad public has been under way since 1988. The program, named "Responsible Care," is a broad-spectrum attack on real and perceived problems within the industry. The program is mandatory for CMA members. Sandra L. Tirey, associate director of health programs for CMA, said that the voluntary program has had good response from the industry in addressing concerns for health, safety, and the environment. And, she pointed out, the program goes well beyond regulatory requirements. "The purpose of Responsible Care is responsible performance," she said.

The six elements of the Responsible Care program start with a documented commitment by the chief executive officers of member companies, assuring that the program gets attention at the top of the company. The program requires codes of management practices, a public advisory panel, detailed company self-evaluations, executive leadership reviews and information exchanges, and the requirement that members have made a measurable difference in industry approaches to environmental health and safety questions. The program builds on existing cooperation with EPA and the Organization for Economic Cooperation and Development, Tirey added.

Laboratory and clinical scientists who focus on environmental research tend to look more intently at specific collaborative opportunities and benefits that increased cooperation and collaboration could bring. Lawrence Fischer, director of the Institute for Environmental Toxicology at Michigan State University in East Lansing, said the opportunities for more cost-effective and cooperative approaches to environmental protection are many, and some are quite obvious. Permits, in general, are a major area where coordination could be very cost effective, he said. In the past, permit applications at the local, state, and federal

levels have been the venue for confrontation, with environmental advocacy or other citizen groups and industry and government on different sides of the table.

"I think it's possible for industry and government to include noninvolved people—university, consultants—people without an axe to grind, to work out agreements based on the science," Fischer said. "We're seeing this more and more, usually at the request of governments but sometimes industry. Some states have made more progress than others. I think it will occur more frequently."

Bernard Goldstein, director of the Environmental and Occupational Health Sciences Institute at the Robert Wood Johnson Medical School, University of Medicine and Dentistry of New Jersey in Piscataway, and former Assistant Administrator of Research and Development at EPA, says there are several aspects to enhancing cooperative efforts in research among the sectors. Goldstein gave examples of research that draw on several disciplines to ask and begin to answer complex environmental health questions. In one example, researchers at the University of New Mexico and at the National Cancer Institute finally were able, because of the new molecular tools, to ask the right questions about the differences in lung cancers for uranium miners and smokers. What the scientists found was a different pattern of mutations in different codons of the p53 gene in the lung cancers of uranium miners and in the lung cancers of tobacco smokers. "We haven't done badly in starting with chemicals and working our way to an associated disease," Goldstein said. "But, how about going from disease back to chemical?"

Another example of cooperative environmental health research is a project investigating lead with multiple sources of financial support at the University of Medicine and Dentistry of New Jersey. Instead of a neighborhood-to-neighborhood epidemiological comparison, the scientists are conducting a trial using pregnant women. One-third of a group of pregnant women is being trained to clean their houses to keep down potentially lead-laden dust that could affect their babies, and the carpets in their homes are being replaced. The other two-thirds of the group are getting training and attention from public health nurses on avoiding childhood accidents. This trial may offer useful insights in cases where there is regulation for lead at low levels of environmental exposure, Goldstein said. The project is

supported by the National Institute of Child Health and Human Development, NIEHS, EPA, and the Robert Wood Johnson Foundation.

An emerging opportunity for scientists may lie in the recent interest expressed by EPA in bringing more science and expertise into the regulatory realm. "They're considering new and larger questions," Fischer said. "A year ago EPA released the results of their relative risk project on ecological concerns, and it was not just chemical by chemical or medium by medium. It was a more holistic approach instead of each group in its own closet. It's an example of a federal agency thinking more broadly about the problems."

A fundamental benefit of the broader approach to environmental agendas "would hopefully be realized by the public. We'd get a better environment with no real serious cost to any single segment of society instead of each working to improve from its own standpoint. The whole thing has to be more cooperative, more collaborative," Fischer continued. "That sort of atmosphere can create great benefits. I believe when industry changes processes to save the environment, they'll find they save costs and improve the bottom line as well. There are companies out there already seeing it," he added.

Cooper reiterated the challenges facing most if not all attempts to move to coordinated, coherent environmental agendas for the nation: "We've been barraged by Alar, nuclear waste, groundwater contamination. The environmental groups want to do all of them; there are not enough bucks." The economics of any proposals for a national environmental agenda are likely to be considered a lot more on the cost side than the pure environmentalists think appropriate, and a lot more on the benefit side than short-time planners among business and antiregulatory interests think proper.

How much of a role scientists will have in the process or its outcome is still unknown. The players will need to know their own and their challengers' histories and goals if they want their topics on a future national environmental agenda. It seems almost certain, however, that those who are invited to the game will be those prepared to play at a round table—willing to give and take.

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